

wherein the prokaryotic beta recombinase is capable of using factors provided by the eukaryotic cells in order to exhibit recombinase activity.

C1  
28. (Twice Amended) A method for mediating intramolecular recombination selected from deletions of DNA fragments located between two six sites and inversions of DNA fragments located between two six sites, in chromatin structures of eukaryotic cells, comprising the step of providing eukaryotic cells with prokaryotic beta recombinase and its specific target sequences;

wherein the prokaryotic beta recombinase is capable of using factors provided by the eukaryotic cells in order to exhibit recombinase activity.

D4  
C2  
33. (Twice Amended) A method according to claim 32, wherein two or more recombination events involving different DNA sequences occur at the same time; and wherein each DNA sequence is located between target sequences; whereby two related genes are inactivated.

D5  
C3  
38. (Twice Amended) A method according to claim 32 [37], wherein the prokaryotic beta recombinase promotes inversion of a DNA fragment located between two inversely oriented six sites.

39. (Twice Amended) A method according to claim 32 [38], wherein the prokaryotic beta recombinase promotes deletion of a DNA fragment located between direct repeated [target] DNA sequences containing six sites.

C<sup>3</sup>  
40. (Twice Amended) A method according to claim 32 [38], wherein the prokaryotic beta recombinase promotes inversion of a DNA fragment located between inverted repeated [target] DNA sequences containing six sites.

C<sup>4</sup> sub D7  
52. (Twice Amended) A method according to claim 27 for development of transgenic mammalian cells, further comprising the steps [step] of selecting eukaryotic cells from the group consisting of mammalian cells, transfecting the cells with prokaryotic beta recombinase, and detecting the prokaryotic beta recombinase in the cells.

C<sup>5</sup>  
53. (Amended) A method [according to claim 27,] for mediating intramolecular recombination in eukaryotic cells, comprising the step of providing eukaryotic cells with prokaryotic beta recombinase and its specific target sequences;  
wherein the prokaryotic beta recombinase is capable of using factors provided by the eukaryotic cells in order to exhibit recombinase activity; and  
wherein the factors provided by the eukaryotic cells comprise HMG1 chromatin-associated protein.

C<sup>6</sup> sub D8  
55. (Amended) A method [according to claim 28,] for mediating intramolecular recombination in chromatin structures of eukaryotic cells, comprising the step of providing eukaryotic cells with prokaryotic beta recombinase and its specific target sequences;  
wherein the prokaryotic beta recombinase is capable of using factors provided by the eukaryotic cells in order to exhibit recombinase activity; and